87

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,124	10/09/2001	Tim Forrester	UTL 00036	3635

7590 12/28/2004

Attn: Patent Department
Kyocera Wireless Corp.
PO Box 928289
San Diego, CA 92192-8289

EXAMINER	
BHATTACHARYA, SAM	
ART UNIT	PAPER NUMBER
2687	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/975,124	FORRESTER, TIM	
	Examiner	Art Unit	
	Sam Bhattacharya	2687	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-16,18-32,37-41,43,44,49-58 and 64-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *38* is/are allowed.

6)☐ Claim(s) *7-11,13-16,18-21,23-27,29-32,37,39,41,43,44,50-58 and 64-69* is/are rejected.

7)☒ Claim(s) *12,22,28,40 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7, 9, 13-16, 18, 20, 38, 43, 64-69 are rejected under 35 U.S.C. 102(b) as being anticipated by Camp, Jr. et al. (U.S. Patent 6,097,974).

As to claim 7, Figure 8 in Camp, Jr. shows a receiver portion for selectively converting a GPS signal and a second rf signal to a lower frequency signal in a wireless handset ("wireless mobile terminals according to the present invention include a GPS Radio Frequency (RF) receiver and a wide bandwidth radiotelephone RF receiver having bandwidth that is at least half as wide as the GPS signal chip frequency. The wireless mobile terminals also include a shared Intermediate Frequency (IF) section that is responsive to both the GPS RF receiver and to the wide bandwidth radiotelephone RF receiver" (Col. 3, lines 21-28)), comprising:

a GPS control signal generator (652) for generating a GPS control signal ("that information may be stored in the memory 654, and then modes may be switched from GPS reception to CDMA cellular telephone usage" (Col. 6, lines 22-24));

a band select switch (844) coupled to the GPS control signal generator for selecting the GPS signal or the second rf signal, responsive to the GPS control signal ("switch 844 is used to switch the two RF signals into the mixer 830" (Col. 6, lines 46-47));

a mixer (830) coupled to the band select switch for receiving the selected signal and to a local oscillator (832) for converting the selected signal to the lower frequency signal ("in the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be adjusted to supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43));

a GPS antenna assembly (612) for receiving the GPS signal (see Col. 5, lines 51-57); and

a second rf signal antenna assembly (611) for receiving the second rf signal (see Col. 5, lines 51-57).

As to claims 14, and 36, Figure 9 in Camp, Jr. shows the receiver portion, wherein the GPS antenna assembly and the second rf signal antenna assembly comprise the same antenna assembly (see Col. 6, lines 54-57).

As to claims 16, and 68, the Camp, Jr. reference discloses the receiver portion and the method, wherein the second rf signal is a PCS signal ("examples of current PCS systems include those designated IS-95, PCS-1900, and PACS in North America, DCS-1800 and DECT in Europe, and PHS in Japan" (Col. 1, lines 25-29). "Similar architectures may be used for GPS/DECT and GPS/WCS terminals and methods" (Col. 6, lines 49-50)).

As to claim 15, Figure 8 in Camp, Jr. shows the receiver portion and the method, wherein the lower frequency signal is an IF signal ("IF Filter 646").

As to claims 18, 38, 65, and 67, Figure 8 in Camp, Jr. shows the receiver portion, wherein: a low side injection of a local oscillator is used for mixing the GPS signal down to the IF signal ("in the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be

adjusted to supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43)).

As to claims 9, 20, 64, and 69, Figure 8 in Camp, Jr. shows the receiver portion and the method, wherein: a high side injection of a local oscillator is used for mixing the PCS signal down to the IF signal ("in the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be adjusted to supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43). "Examples of current PCS systems include those designated IS-95, PCS-1900, and PACS in North America, DCS-1800 and DECT in Europe, and PHS in Japan" (Col. 1, lines 25-29). "Similar architectures may be used for GPS/DECT and GPS/WCS terminals and methods" (Col. 6, lines 49-50)).

As to claim 13, Figure 9 in Camp, Jr. shows a receiver portion for converting an RF signal to an intermediate frequency signal in a wireless communication device ("wireless mobile terminals according to the present invention include a GPS Radio Frequency (RF) receiver and a wide bandwidth radiotelephone RF receiver having bandwidth that is at least half as wide as the GPS signal chip frequency. The wireless mobile terminals also include a shared Intermediate Frequency (IF) section that is responsive to both the GPS RF receiver and to the wide bandwidth radiotelephone RF receiver" (Col. 3, lines 21-28)), comprising:

a GPS control signal generator (652) for generating a GPS control signal ("that information may be stored in the memory 654, and then modes may be switched from GPS reception to CDMA cellular telephone usage" (Col. 6, lines 22-24));

a diplexer (911, 912, 913, 914) for isolating a GPS signal from a second rf signal ("a pair of switches 911 and 912 may be used to switch an appropriate GPS RF filter 914 or cellular filter

913. Although these filters are shown as being separate filters, they may be embodied as a shared filter with variable or switched elements" (Col. 6, lines 57-61));

a local oscillator (832) for generating a local oscillator signal;

a mixer (830), coupled to the diplexer for receiving the GPS signal and the second rf signal and to the local oscillator for receiving the local oscillator signal, for converting the received signals into a lower frequency signal ("FIG. 8 illustrates another embodiment wherein a common mixer 830 and a common local oscillator 832 are provided. Thus, switch 844 is used to switch the two RF signals into the mixer 830" (Col. 6, lines 44-47));

a lower frequency signal filter (646) coupled to the mixer and constructed to transmit a lower frequency signal that is indicative of a selected signal that is a member of the group consisting of the GPS signal and the second rf signal ("a shared IF section 430 is responsive to both the GPS RF receiver 410 and to the wide bandwidth radiotelephone RF receiver 420" (Col. 4, line 67 to Col. 5, line 2));

a GPS antenna assembly (910) for receiving the GPS signal ("as shown in FIG. 9, a dual band GPS and cellular antenna 910 can receive both GPS and wide band radiotelephone signals" (Col. 6, lines 55-57)); and

a second rf signal antenna assembly (910) for receiving the second rf signal ("as shown in FIG. 9, a dual band GPS and cellular antenna 910 can receive both GPS and wide band radiotelephone signals" (Col. 6, lines 55-57)).

As to claim 43, Figure 9 in Camp, Jr. shows the receiver portion of claim 33, further comprising: a diplexer (911, 914, 912) coupled between the GPS antenna (910) and the first mixer (830) for coupling the GPS signal to the first mixer ("a pair of switches 911 and 912 may

be used to switch an appropriate GPS RF filter 914 or cellular filter 913. Although these filters are shown as being separate filters, they may be embodied as a shared filter with variable or switched elements" (Col. 6, lines 57-61)).

As to claim 66, Figure 8 in Camp, Jr. discloses a method of using a mixer and a filter for processing both a GPS signal and a second rf signal ("wireless mobile terminals according to the present invention include a GPS Radio Frequency (RF) receiver and a wide bandwidth radiotelephone RF receiver having bandwidth that is at least half as wide as the GPS signal chip frequency. The wireless mobile terminals also include a shared Intermediate Frequency (IF) section that is responsive to both the GPS RF receiver and to the wide bandwidth radiotelephone RF receiver" (Col. 3, lines 21-28)) comprising:

providing a mixer (830) configured to receive the GPS signal and the second rf signal ("FIG. 8 illustrates another embodiment wherein a common mixer 830 and a common local oscillator 832 are provided. Thus, switch 844 is used to switch the two RF signals into the mixer 830. As with FIG. 7, the oscillator may be readjusted to supply the appropriate frequency signal" (Col. 6, lines 44-48));

coupling the GPS signal and the second rf signal to the mixer ("FIG. 8 illustrates another embodiment wherein a common mixer 830 and a common local oscillator 832 are provided. Thus, switch 844 is used to switch the two RF signals into the mixer 830. As with FIG. 7, the oscillator may be readjusted to supply the appropriate frequency signal" (Col. 6, lines 44-48));

generating a GPS control signal ("that information may be stored in the memory 654, and then modes may be switched from GPS reception to CDMA cellular telephone usage" (Col. 6, lines 22-24));

coupling a first local oscillator signal or a second local oscillator signal to the mixer responsive to the GPS control signal ("FIG. 8 illustrates another embodiment wherein a common mixer 830 and a common local oscillator 832 are provided. Thus, switch 844 is used to switch the two RF signals into the mixer 830. As with FIG. 7, the oscillator may be readjusted to supply the appropriate frequency signal" (Col. 6, lines 44-48));

mixing, using the mixer, both the GPS signal and the second rf signal to a first IF signal and a second IF signal (see Col. 5, lines 11-20);

selecting, using an IF filter, either the first or the second IF signal for further processing ("the present invention can provide shared IF processing of the GPS and wide bandwidth radiotelephone signals and a shared dispreading process including demodulation/correlation/ baseband processing. Accommodation may be made for the differing RF frequencies that are received at similar bandwidths" (Col. 5, lines 24-29)).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 8, 10-11, 19, 21, 39, 40, 41, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,097,974 to Camp, Jr. et al. in view of Kasperkovitz et al. (U.S. Patent 6,665,523 B1).

As to claims 8, 19, and 39, the Camp, Jr. reference discloses the receiver portion of claims 7, 13, and 38. However, it does not expressly disclose an oscillating frequency of the local oscillator is substantially equal to 1391 MHz.

Kasperkovitz et al. disclose a local oscillation signal substantially equal to 1391 MHz. See col. 6, lines 41-43, disclosing a local oscillation range of between 950 and 2150 MHz.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the receiver portion of Camp, Jr. wherein an oscillating frequency of the local oscillator is substantially equal to 1391 MHz, as taught by Kasperkovitz et al., in order to down-convert the received GPS signal to widely used common IF frequency.

As to claim 10, the Camp, Jr. reference discloses the receiver portion of claim 9. However, it does not expressly disclose an oscillating frequency of the local oscillator is substantially equal to 2144 MHz.

Kasperkovitz et al. disclose a local oscillation signal substantially equal to 1391 MHz. See col. 6, lines 41-43, disclosing a local oscillation range of between 950 and 2150 MHz.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the receiver portion of Camp, Jr. wherein an oscillating frequency of the local oscillator is substantially equal to 1391 MHz, as taught by Kasperkovitz et al., in order to down-convert the received GPS signal to widely used common IF frequency.

5. Claims 11, 21 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,097,974 to Camp, Jr. et al. in view of Ito et al. (U.S. Patent 5,852,784).

As to claims 11, 21, and 41, the Camp, Jr. reference discloses the receiver portion of claims 4, 15, and 34. However, it does not expressly disclose the IF signal is substantially equal to 183.6 MHz. The Ito et al. reference teaches the IF signal is substantially equal to 183.6 MHz. See col. 6, line 66 – col. 7, line 5.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the receiver portion of Camp, Jr. wherein the IF signal is substantially equal to 183.6 MHz, as taught by Olsen, in order to down-convert the received signals to a common IF frequency.

6. Claims 23-27, 29, 31, 44, and 50-55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,097,974 to Camp, Jr. et al. in view of Dennison et al. (U.S. Patent 5,235,633).

As to claim 23, Figure 7 in Camp, Jr. shows a receiver portion for converting a GPS signal and a second rf signal to an intermediate frequency signal ("wireless mobile terminals according to the present invention include a GPS Radio Frequency (RF) receiver and a wide bandwidth radiotelephone RF receiver having bandwidth that is at least half as wide as the GPS signal chip frequency. The wireless mobile terminals also include a shared Intermediate Frequency (IF) section that is responsive to both the GPS RF receiver and to the wide bandwidth radiotelephone RF receiver" (Col. 3, lines 21-28)) comprising:

a GPS control signal generator (652) for generating a GPS control signal ("that information may be stored in the memory 654, and then modes may be switched from GPS reception to CDMA cellular telephone usage" (Col. 6, lines 22-24));

a local oscillator source (732) configured to generate a GPS local oscillator signal and a second rf signal local oscillator signal wherein the GPS control signal generator is coupled to the local oscillator source for selecting one of a member of a group consisting of the rf signal local oscillator signal and the GPS local oscillator signal ("in the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be adjusted to supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43));

a GPS antenna assembly (612) for receiving the GPS signal;

a second rf signal antenna assembly (611) for receiving the second rf signal;

a mixer (630, 640) coupled to the local oscillator source and to the duplexer, the mixer constructed to convert the second rf signal to a first lower frequency signal and to convert the GPS signal to a second lower frequency signal ("the elements of FIG. 7 correspond to those of FIG. 6 except that a common oscillator 732 is used for both the GPS mixer 630 and the wide bandwidth radiotelephone mixer 640" (Col. 6, lines 29-32). "In the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be adjusted to supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43));

a band pass filter (646) coupled to the mixer, the filter configured to transmit one of a member of the group consisting of the first lower frequency signal and the second lower frequency signal (see Col. 5, lines 11-21).

However, the Camp, Jr. reference does not disclose a duplexer coupled to the GPS antenna assembly and to the second rf signal antenna assembly and configured to transmit the GPS signal and the second rf signal. The Dennison reference teaches a duplexer 15 coupled to

the GPS antenna assembly and to the second rf signal antenna assembly and configured to transmit the GPS signal and the second rf signal. See FIG. 6.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the receiver portion of Camp, Jr. to comprise a duplexer coupled to the GPS antenna assembly and to the second rf signal antenna assembly and configured to transmit the GPS signal and the second rf signal, as taught by Dennison et al., in order to isolate received RF signals from transmitted RF signals such that a receiver and a transmitter may both use the same antenna.

As to claim 24, Camp, Jr. discloses the receiver portion of claim 23. Figure 9 in Camp, Jr. further shows the GPS and second rf signal antenna assemblies are the same antenna assembly (see Col. 6, lines 54-57).

As to claim 25, Camp, Jr. discloses the receiver portion of claim 23. Figure 8 in Camp, Jr. further shows the lower frequency signal is an IF signal ("IF Filter 646").

As to claims 26 and 27, Camp, Jr. discloses the receiver portion, wherein the second rf signal is a PCS signal (Camp, Jr.; "examples of current PCS systems include those designated IS-95, PCS-1900, and PACS in North America, DCS-1800 and DECT in Europe, and PHS in Japan" (Col. 1, lines 25-29). "Similar architectures may be used for GPS/DECT and GPS/WCS terminals and methods" (Col. 6, lines 49-50)).

As to claim 29, Camp, Jr. discloses the receiver portion of claim 25, wherein: a low side injection of a local oscillator is used for mixing the GPS signal down to the IF signal (Camp, Jr.; "in the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be adjusted to

supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43). See also Figure 8).

As to claim 31, Camp, Jr. discloses the receiver portion of claim 27, wherein: a high side injection of a local oscillator is used for mixing the PCS signal down to the IF signal (Camp, Jr.; "in the embodiment of FIG. 7, the circuit that controls the oscillator 732 may be adjusted to supply the appropriate frequency signal and permit reception of either GPS or wide band radiotelephone signals" (Col. 6, lines 39-43). "Examples of current PCS systems include those designated IS-95, PCS-1900, and PACS in North America, DCS-1800 and DECT in Europe, and PHS in Japan" (Col. 1, lines 25-29). "Similar architectures may be used for GPS/DECT and GPS/WCS terminals and methods" (Col. 6, lines 49-50)).

As to claim 44, the Camp, Jr. reference discloses the receiver portion of claim 33. However, it does not disclose a duplexer coupled between the GPS antenna and the first mixer for coupling the GPS signal to the first mixer. The Dennison reference teaches a duplexer coupled between the GPS antenna and the first mixer which is inherently used for coupling the GPS signal to the first mixer. See FIG. 6.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the receiver portion of Camp, Jr. to comprise a duplexer coupled between the GPS antenna and the first mixer for coupling the GPS signal to the first mixer, as taught by Dennison et al., in order to isolate received RF signals from transmitted RF signals such that a receiver and a transmitter may both use the same antenna.

As to claim 50, the Camp, Jr. reference discloses a wireless handset ("wireless mobile terminals according to the present invention include a GPS Radio Frequency (RF) receiver and a

wide bandwidth radiotelephone RF receiver having bandwidth that is at least half as wide as the GPS signal chip frequency. The wireless mobile terminals also include a shared Intermediate Frequency (IF) section that is responsive to both the GPS RF receiver and to the wide bandwidth radiotelephone RF receiver" (Col. 3, lines 21-28)), comprising:

a receiver for receiving a plurality of rf signals (see Figure 9);

a battery coupled to the transceiver for supplying power to the transceiver (it is inherent that a battery is in a wireless phone for supplying power); and

a case enclosing the transceiver and the battery (it is inherent that a wireless phone has case for enclosing the transceiver and battery),

the receiver (shown in details in Figure 9) comprising:

an rf control signal generator (652) for generating an rf control signal ("that information may be stored in the memory 654, and then modes may be switched from GPS reception to CDMA cellular telephone usage" (Col. 6, lines 22-24));

a band select switch (911, 912) coupled to the rf control signal generator for selecting between the plurality of rf signals, responsive to the rf control signal ("a pair of switches 911 and 912 may be used to switch an appropriate GPS RF filter 914 or cellular filter 913. Although these filters are shown as being separate filters, they may be embodied as a shared filter with variable or switched elements" (Col. 6, lines 57-61));

a mixer (830), coupled to the band select switch for receiving the selected signal and to a local oscillator (832), for converting the selected signal to an IF signal ("FIG. 8 illustrates another embodiment wherein a common mixer 830 and a common local oscillator 832 are

provided. Thus, switch 844 is used to switch the two RF signals into the mixer 830" (Col. 6, lines 44-47));

an antenna assembly (910) coupled to the mixer for receiving the plurality of rf signals.

However, the Camp, Jr. reference does not expressly disclose a transceiver for transmitting and receiving a plurality of rf signals. The Dennison reference teaches a transceiver 8for transmitting and receiving a plurality of rf signals. See Figure 6.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wireless handset of Camp, Jr. to comprise a transceiver for transmitting and receiving a plurality of rf signals, as taught by Dennison et al., in order to enable nearly instantaneous two-way communications.

As to claim 51, Camp, Jr. discloses the wireless handset of claim 50, wherein the mixer is a passive mixer (Camp, Jr.; "wireless mobile terminals according to the present invention include a GPS Radio Frequency (RF) receiver and a wide bandwidth radiotelephone RF receiver having bandwidth that is at least half as wide as the GPS signal chip frequency. The wireless mobile terminals also include a shared Intermediate Frequency (IF) section that is responsive to both the GPS IF receiver and to the wide bandwidth radiotelephone RF receiver" (Col. 3, lines 21-28)).

As to claim 52, Camp, Jr. discloses the wireless handset of claim 50, further comprising a low noise amplifier (915 in Figure 9, Camp, Jr.) coupled between the band select switch and the mixer.

As to claim 53, Camp, Jr. discloses the wireless handset of claim 50. Figure 6 in Camp, Jr. further teaches an amplifier 615 coupled between the mixer 640 and an IF band pass filter 613.

As to claim 54, Camp, Jr. discloses the wireless handset of claim 50, wherein the plurality of rf signals comprises a GPS signal (Camp, Jr.; "as shown in FIG. 9, a dual band GPS and cellular antenna 910 can receive both GPS and wide band radiotelephone signals" (Col. 6, lines 55-57)).

As to claim 55, Camp, Jr. discloses the wireless handset of claim 50, wherein the plurality of rf signals comprises a cellular CDMA signal (Camp, Jr.; "as shown in FIG. 9, a dual band GPS and cellular antenna 910 can receive both GPS and wide band radiotelephone signals" (Col. 6, lines 55-57). "Preferably, the wide bandwidth radiotelephone RF receiver 420 is a CDMA or TDMA RF receiver" (Col. 5, lines 4-5)).

As to claim 56, Camp, Jr. discloses the wireless handset of claim 50, wherein the plurality of rf signals comprises a GSM signal (Peterzell; see Col. 5, lines 21-24 and Figure 5).

As to claim 57, Camp, Jr. discloses the wireless handset of claim 50, wherein the plurality of rf signals comprises a cellular CDMA signal and a GPS signal (Camp, Jr.; "as shown in FIG. 9, a dual band GPS and cellular antenna 910 can receive both GPS and wide band radiotelephone signals" (Col. 6, lines 55-57). "Preferably, the wide bandwidth radiotelephone RF receiver 420 is a CDMA or TDMA RF receiver" (Col. 5, lines 4-5)).

As to claim 58, Camp, Jr.-Peterzell discloses the wireless handset of claim 50, wherein the plurality of rf signals comprises a cellular CDMA signal, a GPS signal and a PCS signal (Peterzell; see Col. 5, lines 21-24 and Figure 5).

7. Claims 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,097,974 to Camp, Jr. et al. in view of Dennison et al. (U.S. Patent 5,235,633) and further in view of Douglas et al. (U.S. Patent 6,505,054).

As to claims 56 and 58, Camp, Jr.-Dennison fails to disclose a plurality of rf signals that comprises GSM, GPS and PCS signals.

However, Douglas et al. discloses a system in which a plurality of rf signals comprises GSM, GPS and PCS signals. See FIG. 2 and col. 3, line 45 – col. 4, line 6. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the receiver portion of Camp, Jr.-Dennison wherein the plurality of signals comprise GSM, GPS and PCS signals, as taught by Douglas et al. so that the receiver can be incorporated in existing satellite and terrestrial systems.

Allowable Subject Matter

1. Claims 12, 22, 28, 40 and 49 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

2. Claim 38 is allowed.

3. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to specifically disclose a combination of elements in a multi-band receiver including a divide by two circuit coupled between the local oscillator source and the second mixer for dividing an initial local oscillator signal by two to produce the second local

oscillator signal, as in claims 40 and 49; a control signal generator coupled to a power line of the GPS low noise amplifier for coupling the power supply to the GPS low noise amplifier when the GPS control signal is on, and to a power line of the PCS low noise amplifier for coupling the power supply to the PCS low noise amplifier when the GPS control signal is off, as in claims 12, 22, 28 and 37.

Response to Arguments

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant has sworn behind the Olsen and Peterzell references. Accordingly, the Examiner now applies the Kasperkovitz, Ito, Dennison and Douglas references, all of which were filed prior to the January 12, 2001 or September 28, 2001 dates sworn behind by the Applicant.

Regarding claims 7, 9, 18, 20, 38, 64, 65, 67 and 69, Applicant states that Camp, Jr. does not describe a high or low side injection of a local oscillator used for mixing a GPS signal down to the IF signal.

Examiner respectfully disagrees. The high and low side injections of the local oscillator are interpreted as referring to high and low local oscillator frequency bands, respectively. Camp, Jr. covers this limitation because high and low local oscillator frequencies are relative to one another and frequencies of different ranges are inherent to the local oscillator disclosed by Camp, Jr.

Regarding claims 13 and 43, Applicant argues that Camp, Jr. does not show a diplexer. Applicant contends that the switches 911, 912 and filters 913 and 914 together are not a diplexer, because in a diplexer signals in both bands are passed if present.

Examiner respectfully disagrees. In its broadest meaning, a diplexer is a coupling device that permits two radio receivers to share the same antenna. The switches and filters in Camp, Jr. meet this definition since they allow GPS and cellular receivers to share the same antenna.

Regarding claim 66, Applicant argues that Camp, Jr. does not show mixing both the GPS signal and the second RF signal, but only shows mixing either the GPS signal or the second RF signal.

Examiner respectfully disagrees. Claim 66 recites "mixing, using the mixer, both the GPS signal and the second rf signal." Given the broadest reasonable interpretation, the GPS signal and the second rf signal can be mixed at different times, and yet both of them will still be mixed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Bhattacharya whose telephone number is (703) 605-1171. The examiner can normally be reached on weekdays 8:30 a.m. to 6:00 p.m., first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (703) 305-3016. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sb

12/22/04
LESTER G. KINCAID
PRIMARY EXAMINER